



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/083,385	02/27/2002	Satoshi Hirahara	220049US0	4760
22850	7590	10/30/2003	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			VO, HAI	
			ART UNIT	PAPER NUMBER
			1771	

DATE MAILED: 10/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

eb5

Office Action Summary	Application No.	Applicant(s)	
	10/083,385	HIRAHARA ET AL.	
	Examiner	Art Unit	
	Hai Vo	1771	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>4</u> | 6) <input type="checkbox"/> Other: |

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-13, 15 and 30 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Miwa et al (US 4,851,304). Miwa teach a porous electrode substrate for fuel cell comprising a carbon fiber mat impregnated with a resin wherein the carbon fiber having a fiber diameter of 4 to 9 microns within the claimed range (abstract). Miwa teaches the porous substrate having a thickness and resistivity within the claimed ranges (table 4). Miwa teaches the substrate comprising carbon fiber bonded to one another by an epoxy resin binder in an amount from 5 to 20 wt%, within the claimed range (column 7, line 39). It appears that the substrate of Miwa is made of the same composition as the conductive carbonaceous fiber sheet of Applicants. Further, Miwa and Applicants are using the same process to produce the carbon fiber (column 7, line 40 et seq.). It is the examiner's position that the basic weight, bending resistance, air permeability, degree of fluffing would be inherently present. This is in line with *In re Spada*, 15 USPQ 2d 1655 (1990) which holds that products of identical chemical composition can not have mutually exclusive properties. Note *In re Best* 195 USPQ at 433, footnote 4 (CCPA 1977) as to the providing of this rejection under 35 USC

103 in addition to the rejection made under 35 USC 102. It is the examiner's position that Miwa anticipates or strongly suggests the claimed subject matter.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muraki et al (US 5,599,612) in view of Suzuki (US 5,439,746). Muraki teaches a prepreg for uses in golf clubs having a bending resistance of 7mm to 12 mm (column 7, lines 40-45) and a unit weight from 120 to 250 g/m² (column 5, line 15) within the claimed ranges. Muraki teaches the woven carbon fiber fabric obtained by weaving carbon fiber bundles into woven fabric (column 2, lines 55-60). Muraki teaches the prepreg comprising woven carbon fiber fabric bonded to one another by an epoxy resin binder in an amount of 40 wt%, within the claimed range (example 2). Muraki teaches the prepreg comprising a low temperature type hardener in an amount of 0.1 to 1 wt% (column 8, lines 45-47). It appears that the prepreg of Muraki is made of the same composition as the conductive carbonaceous fiber sheet of Applicants. Further, Muraki and Applicants are using the same process to produce the carbon fiber (column 3, line 15 et seq.). It is the examiner's position that the volume resistivity, air permeability, degree of fluffing would be inherently present. This is also in line with *In re Spada*. Muraki does not specifically disclose the thickness of

Art Unit: 1771

the prepreg. Suzuki teaches a prepreg useful as a golf club shaft comprising a carbon fiber that is impregnated with an epoxy resin (abstract). Suzuki teaches the prepreg having a thickness of 200 microns or 0.2 mm (column 14, line 28).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the prepreg having a thickness instantly claimed because such is a typical thickness of the golf club shaft and Suzuki provides the necessary details to practice the invention of Muraki.

With regard to claims 6 and 20, Muraki does not specifically disclose the fiber diameter of the carbon fiber. Suzuki teaches the prepreg comprising the carbon fiber having a diameter of 7 microns (column 14, line 52). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ the carbon fiber having a diameter instantly claimed motivated by the desire to provide improved tensile modulus to the composite structure.

With regard to claim 26, Muraki does not specifically disclose the carbon fiber being a product of carbonization of acrylic fibers. Suzuki teaches the carbon fibers being a product of pitch-series carbon fiber (column 12, line 48). Such is known in the art and Suzuki provides the necessary details to practice the invention of Muraki.

With regard to claims 30-36, Muraki does not specifically disclose the prepreg being used as a gas diffusion layer material of a solid polymer electrolyte fuel cell. However, it has been held that a recitation with respect to the manner in which a claimed conductive carbonaceous fiber sheet is intended to be employed does not differentiate the claimed conductive carbonaceous fiber sheet from a prior art label

satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ2d 1647 (1987).

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (703) 605-4426. The examiner can normally be reached on M,T,Th, F, 8:30-6:00 and on alternating Wednesdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (703) 308-2414. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

HV

DANIEL ZIRKER
PRIMARY EXAMINER
GROUP 1300-
1700

Daniel Zinker